

WHAT IS CLAIMED IS:

1. An electron beam apparatus, comprising:  
an electron source including an electron-emitting device;  
5 an electron beam irradiation member which is opposed to the electron source and irradiated with an electron emitted from the electron-emitting device;  
a potential specifying plate which is located between the electron source and the electron beam  
10 irradiation member and which includes a plurality of openings through which the electron emitted from the electron-emitting device transmits; and  
a spacer located between the electron beam irradiation member and the potential specifying plate,  
15 wherein in a distance between a region between one opening of the plurality of openings of the potential specifying plate which is near the spacer and the spacer and the electron beam irradiation member is  $D_1$  and a distance between a region between  
20 the one opening of the potential specifying plate which is near the spacer and another opening of the plurality of openings of the potential specifying plate which is not near the spacer and the electron beam irradiation member is  $D_2$ , a relationship  $D_1 < D_2$   
25 is satisfied.

2. An electron beam apparatus, comprising:

an electron source including an electron-emitting device;

an electron beam irradiation member which is opposed to the electron source and irradiated with an electron emitted from the electron-emitting device;

a potential specifying plate which is located between the electron source and the electron beam irradiation member and which includes a plurality of openings through which the electron emitted from the electron-emitting device transmits; and

a spacer located between the electron source and the potential specifying plate,

wherein in a distance between a region between one opening of the plurality of openings of the potential specifying plate which is near the spacer and the spacer and the electron-emitting device by  $D3$  and a distance between a region between the one opening of the potential specifying plate which is near the spacer and another opening of the plurality of openings of the potential specifying plate which is not near the spacer and the electron-emitting device is  $D4$ , a relationship  $D3 > D4$  is satisfied.

3. An electron beam apparatus according to claim 1, wherein a thickness of the region between the one opening of the potential specifying plate which is near the spacer and the spacer is larger

than a thickness of another region.

4. An electron beam apparatus according to  
claim 2, wherein a thickness of the region between  
5 the one opening of the potential specifying plate  
which is near to the spacer and the other opening of  
the potential specifying plate which is not near the  
spacer is larger than a thickness of another region.

10 5. An electron beam apparatus according to  
claim 1, wherein the potential specifying plate has,  
between the one opening near the spacer and the  
spacer, a protrusion protruding toward a side of the  
electron beam irradiation member.

15  
6. An electron beam apparatus according to  
claim 2, wherein the potential specifying plate has,  
between the opening near the spacer and the another  
opening not near the spacer, a protrusion protruding  
20 toward a side of the electron beam irradiation member.